INTRODUCTION

Advances in Information technology have been so rapid that it has changed the shape of all economic activities in the world and as a result world is moving towards globalization. Countries which do not deploy communication and information processing capabilities and which do not have the qualified human resources to run and sustain such capabilities will be pushed outside the world market because of "Information Poverty". Thus many Developing countries are making strategies to deploy Information technology in all possible areas be it point of agriculture, women empowerment, manufacturing, education.

It seems that Information technology for developing countries is a "MUST HAVE" tool for development, economic growth and poverty alleviation and as we have arrived at an age where 'Time' and 'Information' are treated as Capital. So if developing countries have to join the fast track of the development then present culture of development has to be reviewed.

This paper aims at discussing impact and economic enrichment of the society using Information technology in India-A Developing Country as India’s Information technology sector is an interesting example of how competitive a development country can be globally in a High-Technology area and India’s Information Technology tracks are extraordinary compared to all to all its other business sectors. This sector has seen an average 42% annual growth in the past ten years, standing head and shoulder above other sectors of the economic landscape.

THE DYNAMICS OF ‘NEW ERA’ INDUSTRIES

In present Scenario there is a drift in economic structure, it is most likely the knowledge based economy then the industrial economy and it seems that Information Technology has become a major force in transforming social, economic and political life globally. Thus the revolutionary advances in Information technology reinforce the economic and social changes that are transforming business and society. This revolution leads to a new kind of economy-"The Information economy” in which information is the critical resource and the basis for the competition.

Organizations in Developed Countries have changed their capital spending structure from more in industrial spending(equipment, machines for services)then in information spending(computer and communication equipments).This spending in the Information technology sector in developing Countries is increasing but at a slow and steady speed as access to infrastructure is inadequate and
unapproachable because more than half of the population in developing countries like India live below poverty line or rely heavily on agriculture sector which is largely skewed against equitable growth.

Thus it seems that for complete development time, money and social setup are the major constraints being faced by the developed countries but things can change if new “Mantra” of information technology is adopted properly.

To make this tool a success in India many government and non-government organizations are taking initiative to develop the rural society so that overall upliftment and extraordinary gains take place. For example- DRISHTTEE, an NGO heading with aim of ‘Connecting India Village by Village’. The objective of this project is to establish community owned innovative and sustainable information technology project in most poverty stricken and tribal dominated rural areas throughout India. Project has been designed using G2C (Government to Citizen) model. It is a State-of-the-art software which facilitates communication and information interchange within a localized intranet between villages and a district center. This communication backbone has supplemented by a chain of rural service-Avedan, Land Records, Gram Daak (Mailing software), gram Haat (Virtual Market Place), Vaivahiki (Matrimonial), Shikayat (Online Grievance redressal), Mandi Information System and a host of the customized services. DRISHTTEE is capable of enabling the creation of approximately 50,000 Information Kiosks all over India within a span of 6 years(source drishtee.com).

ECONOMIC VITALITY THROUGH INFORMATION TECHNOLOGY IN DEVELOPING COUNTRIES

With the know how of the dynamics of new era industry, it seems that information technology can wave out the old economic setups and poor statistics. As India’s information technology sector is an interesting example of how competitive a developing country can be globally in a high-technology domain. Yet, India’s InfoTech record has been extra ordinary, compared to all its other business sectors:

- From a fledgling level of US$43.5 million in 1990, the sector notched up revenues of around US$11 billion in 2000-01, representing nearly 3% of India’s GDP. Exports accounted for US$5.8 billion, a major engine of growth for the Union’s InfoTech industry.
- India today ranks as the most competitive supplier of skilled information technology professionals and is the preferred supplier of software solutions to the developed world, led by the US.
- In 2000, 185 of the Fortune 500 companies outsourced software requirements to India.
- Of the 32 companies worldwide having SEI/CMM Level 5 certification – the highest quality standard in software, 16 are Indian companies.
- Indian companies have earned credibility in delivering to mission-critical requirements, following the successful implementation of Y2K and Euro conversion solutions.

The sector has seen an average 42% annual growth in the past ten years, standing head and shoulder above other sectors of the economic landscape. Such performance is even more significant considering the size of its InfoTech infrastructure, characterized by low penetration of office automation in the domestic sector, with an installation base of only 6 million PCs and 2 million Internet dialup subscriptions, less than 1 Gbps of international bandwidth and almost complete import-dependence in IT hardware.

Thus the overall success of the IT industry in India has to some extent managed to spill over to other industries in the country. The Indian economy has grown at an average rate of 6.0% a year in the last five years. In India, the success of software industry can be attributed in no small measure to the excellent teamwork between Government and Industry. The Government of India, impressed by the excellent performance of the Indian software industry has provided all support, including
fiscal benefits, the availability of high speed data communications and infrastructure, besides ensuring an almost red tape-free system. The government, in fact, has given the red-carpet treatment to this industry. The fiscal benefits include trade free zones, Software Technology Park schemes, zero import duty on software, and 100% exemption on profits from software exports.

Fortunately for India the phenomena of “reverse brain drain” are enriching its workforce with people having diverse international experience, knowledge of latest technology, management skills and much more. This has made it easier for MNC to set up their back offices in India.

The major sectors which are witnessing a special thrust for adoption of IT are Government administrations, Insurance, Banks, Energy, Financial Institutions, Defense, Public Tax System, Ports, Customs, Telecom, Education and Small Office Home Office / Individuals. Large sectors with slow IT penetration rate such as textile industry and healthcare are being encouraged by the government and the private sector to adopt IT. ERP implementations and systems integration continue to be at the forefront of IT growth in India. (source ministry of information technology, India website.)

OPPORTUNITIES AND CONSTRAINTS

Growth opportunities:

Until higher rates of IT penetration are achieved in the home market, growth will continue to exploit the competitive advantages India enjoys as a factor resource, linked primarily to global outsourcing needs, as opposed to the servicing of India’s home market. This makes the InfoTech sector externally reliant, closely tied to developments on the global IT stage. This global market is organizing around IT services, IT-enabled services and e-commerce.

- IT-enabled services
  IT-enabled services, as the term suggests, are commercial or business services based on the use of IT. The area of IT-enabled services includes customer interaction services, back office operations relating to finance and accounting, transaction process assistance, data conversion, HR services, transcription services, content development and other services that can be delivered from remote locations (education/training, research and consulting, etc.).

  IT-enabled services have the capacity to attract investment in infrastructure in India, and are a counterweight to the on-site service model that dominates exports.

  A time zone difference of 12 hours from the US, the ability to provide a 24-hour presence, and English-conversancy are crucial advantages to India in the provision of IT-enabled back office services such as medical transcription or indeed front-end services, though further certification and training are required to improve quality. However, these opportunities can only be fully exploited if telecom infrastructure and bandwidth are developed to an adequate level.

- E-commerce
  Global e-commerce revenues were estimated to be US$10 billion in 1999, representing 0.05% of the global economy. However, e-commerce is growing exponentially, and is projected to touch US$200 billion by 2002, with the Internet already attaining critical mass to allow e-commerce to flourish.

  India’s e-commerce market is still quite small, with total revenues of Rs 4.5 billion in 2000, most of it originating in the form of B2B commerce. However, increased corporate spending on e-commerce initiatives, government computerization in billing and payment services, plus sharp growth in the SOHO segment augur well for India’s e-commerce services future. In addition to infrastructure, India needs to create a favorable environment for e-commerce transactions through foolproof, secure, payment gateways, and suitable tax and commercial laws covering cyber transactions.

- IT services
IT services can be broadly divided into broad line services, which account for about 23% of the market, E-business services, accounting for more than 41% of the market, and consulting, with the remaining 16%.

The global IT services market stood at US$349 billion in 1999, and is expected to touch US$584 billion by 2004. Product Support Services, Development and Integration, and Business management are emerging as the most prominent market segments. Systems Development and Integration is the fastest-growing segment, given the opportunities from the Internet and WAP technologies.

**Constraints in Growth:**

*Do poor people in developing countries need ‘IT’?*

Some say that basic needs must come first; while other say that information technology can help the people to meet basic needs and can provide access to resources to exit from poverty. But there are some constraints which stops the people in developing countries from using or accessing these technologies.

- Technological Constraints: No telephones, no electricity, connectivity problem, expensive devices.
- Social and Economic Constraints: literacy, language and cost.
- Other Constraints: Geographical locations, social and culture norms, Skills, gender discrimination, rural population, one person (Men) acting as a bread winner, Income inequalities.

**WAYS IN WHICH INFORMATION TECHNOLOGY IS BENEFITING THE POORS IN DEVELOPING COUNTRIES:**

There are many projects which show that information technology is reaching and benefiting poor people in developing countries. These innovative and interesting projects are:

- **e-Governance:** This project aims at poor women who can have profit greatly by having access to government information online such as Land registration through computer aided administration and registration department (CARD). This project is functioning in Andhra Pradesh in India since 1998.

- **SEWA:** Self employed women’s association (SEWA) has been organizing women in the informal sector in India since 1972. SEWA is the first organization globally to realize the potential of using information technology for the productive growth. SEWA is establishing technology Information Centers in 11 Districts of Gujarat in India to provide computer awareness training and basic computer skills.

- **GYANDOOT / DHAR:** Organised by District government of Madhya Pradesh in India. It is an intranet linked to the Internet that connects some 26 rural information centers in Dhar District in India and serves ½ a million people.

- **COFFEE PLANTER KIOSKS:** In Bangalore, India ITC plans to set up 25 internet kiosks in Karnataka for Coffee Planters to get global price information and sell their product at right time.

- **TARHaat:** A Portal cum economic system to connect villagers with information services, government agencies and markets in their local languages. Local Business will be franchised to set up Cyber kiosks (TARAdhabas) for public access.

- **DAIRY FARMERS AND IT:** NDDB - Indian National dairy Development Board has set up farmers information and services kiosks to deliver content and services to poor rural people. Using IT milk cooperative has seen a substantial increase in milk production, resulting in more efficient milk collection and higher profits. Computer are used at 2500 rural locations covering ½ million people.

- **WARANA:** This project uses computer information kiosks and training centers to bring health and education information directly to the rural poor, focusing on
women, in an area that covers 70 villages in Maharashtra in India.

- **DRISHTEE: Drishtee** is an organizational platform for developing IT enabled services to rural and semi-urban populations through the usage of state-of-the-art software. The services it enables include access to government programs and benefits, market related information, and private information exchanges and transactions. Using a tiered franchise and partnership model, Drishtee is capable of enabling the creation of approximately 50,000 Information Kiosks all over India within a span of six years. These kiosks would potentially serve a market of 500 million people, with aggregate discretionary purchasing power of Rs. 100 billion (Rs. 10,000 crores). In less than two years, Drishtee has successfully demonstrated its concept in over 90 kiosks across five Indian states.

- **e-Choupal**: e-Choupal, the unique web based initiative of ITC's International Business Division, offers the Farmers of India all the information, products and services they need to enhance farm productivity, improve farm-gate price realization and cut transaction costs. Farmers can access latest local and global information on weather, scientific farming practices as well as market prices at the village itself through this web portal - all in Hindi. Choupal also facilitates supply of high quality farm inputs as well as purchase commodities at their doorstep.

Given the literacy and infrastructure constraints at village level, this model is designed to provide physical service support through a Choupal Sanchalak - himself a lead farmer - who acts as the interface between computer terminal and the farmers. Full contents of this site are therefore made available to the registered sanchalaks only.

All the examples cited above come from India. India has become a laboratory for information solutions that reach and benefit the poor. It seems that with favorable political conditions and by active involvement of some NGOs for digital working can lead the country to develop a better and rich tomorrow.

**CONCLUSION**

Use of Information technology provides extraordinary opportunities which leads to gains. The key issue is how to generate economic resources that would allow a developing country to provide facilities to its people not only by building the infrastructure but being economically and technologically able to maintain it repair it and upgrade it. So the issue is not that the people should choose between eating or using information technology or computing facilities. It is likely that IT-based economy can generate enough value in the new, global economy to enable developing countries to develop fast and to experience unlimited opportunities without resorting to international charity on permanent basis.

Another key issue is of productivity, competitiveness, educated labor and efficient management which are major obstacles that exist today for developing countries. It is most likely that through technology led development, developing countries can jump stages of development process to meet human needs efficiently. Thus development policy based on technological innovations seems to be important and appropriate tool for development. Thus by using Techno-Fantasia developing countries can overcome these obstacles and can have a stable and sustainable pattern of economic growth.